



AUTHORITY TO CONSTRUCT/ PERMIT TO OPERATE 10318

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EQUIPMENT OWNER/OPERATOR:

City of Santa Maria - Public Works Department

FACILITY LOCATION:

City of Santa Maria Landfill, 2065 East Main Street, Santa Maria, California

STATIONARY SOURCE DESIGNATION:

City of Santa Maria Landfill

AUTHORIZED MODIFICATIONS:

- 1) The flare's maximum permitted heat release rate was increased under this permit to 13.5 MMBtu/hr. The flare was previously rated to 10.5 MMBtu/hr as specified under PTO 9547 (issued October 16, 1997); and
- 2) The landfill gas High Heating Value ("HHV") design basis was changed to 450 Btu/SCF from the 330 Btu/SCF assumed under PTO 9547. A formula was added to this permit to facilitate compliance assessments with landfill gas heating values other than 450 Btu/SCF such that the 13.5 MMBtu/hr limit can be accurately monitored.

EQUIPMENT DESCRIPTION:

A landfill gas collection and combustion system consisting of:

1. Landfill gas extraction wells (as of October 2000: approximately 54 wells, with 24 wells drilled during Phase I and 30 wells drilled during Phase II) with the total number of required wells to collect landfill gas shall be determined through compliance with Condition No. 10 of this permit.
2. Condensate water separator, vertical, 30 inches in diameter by 5 feet high, HDPE construction, used to remove and collect condensate (water vapor) from incoming landfill gas.

SBCAPCD Responses to
October 9, 2000, City of Santa Maria Comments on
Draft ATC/PTO 10318

Equipment Description:

1. The final permit added a cross-reference to Condition No. 10 that requires the landfill's well field to comply with the NSPS for adequate collection of produced landfill gases. The total number of wells is basically for informational purposes. However, there must be an adequate number of wells to meet the surface emission limits of the NSPS.

Conditions:

- g. As discussed during a phone conversation between Mr. Zhao and Mr. Sterner of the APCD on October 25, 2000, Condition 8.g will not be changed. The actual flare temperature shall not vary by more than +/- 5% from the setpoint temperature at all times the flare operates. We further understand that the flare is equipped with high and low temperature alarms that will facilitate alerting the flare operators of such an aberrant temperature condition.
- h. We have deleted Condition 8.h from the draft permit in the final that refers to a minimum flared gas heating value.
- i. No changes will be made to Condition 8.i because this requirement is derived from the NSPS. If, at some point in the future, the flare system will be inoperable for more than 120 consecutive hours, the City of Santa Maria must obtain relief from this permit condition. Such relief may be pursued on a case-by-case basis, through an application for a Variance that would be considered by the APCD's Hearing Board.

Flare Source Test Requirements, Table 2

This table has been modified as requested to specify tests at only 1500 °F +/- 30 °F. In addition, Condition 8.f was modified in the draft to specify that the flare will only be operated at 1500 °F +/- 5% (i.e., 75 °F)

--- End of Response to Comments ---

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3. Condensate water holding tank, 1,050 gallon capacity, 5 feet 1 inch in diameter by 8 feet 1 inch high. A 1,300 gallon secondary container is placed around the water tank. Condensate water collected in the tank will be disposed of by injection into the flare. A 5 hp air compressor drives the pneumatic pump used to send the condensate water from the tank to the flare.
4. Gas blower, 500 scfm capacity, used to draw gas from the collection system and deliver it to the flare burner manifold. A standby blower is provided in case of failure of the primary blower, or to increase landfill gas flows to the flare as necessary to adequately collect the landfill's gas emissions.
5. Gas flow measurement station, used to measure and record gas flow rates.
6. Propane system, two propane tanks equipped with regulators set at different pressures. The pressure in the piping will indicate which tank is in operation (primary/high pressure or secondary/low pressure).
7. Enclosed ground flare, revised rating of 13.5 MMBtu/hr, manufactured by Perennial Energy, Inc., model EF4-10.5-14303233-Z-00-10, used for the continuous flaring of landfill gas. The flare is approximately 6 feet in diameter by 24 feet high, equipped with an automatic ignition system, three thermocouples, a propane fired pilot, an automatic temperature control system, a flame arrester, and a safety shutdown system.

APPLICABLE PROHIBITORY RULES:

- | | |
|------------------|--|
| Rule 301. | Circumvention |
| Rule 302. | Visible Emissions |
| Rule 303. | Nuisance |
| Rule 309. | Specific Contaminants |
| Rule 310. | Odorous Organic Sulfides |
| Rule 311. | Sulfur Content of Fuels |
| Rule 341. | Municipal Solid Waste Landfills |

PROCESS DESCRIPTION:

Landfill gas, which contains 30% to 60% methane, is produced when buried refuse decomposes. This permit is for equipment that collects and destroys the gas produced at the Santa Maria Landfill. The gas collection system as of October 2000, utilizes approximately 54 wells, 24 of which were drilled during Phase I and 30 drilled during Phase II. The depth of the wells varies with the depth of the waste. The destruction of the produced gas occurs at the ground flare which is designed to operate as the Best Available Control Technology (BACT) for NO_x and CO when initially constructed in 1997. This project is designed to minimize the potential contamination of groundwater by landfill gas and to control subsurface and surface landfill gas migration.

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CONDITIONS:

1. **Landfill Gas Throughput Limits.** The daily and annual gas volume sent to the enclosed ground flare shall not exceed the values listed below. These limits are based on the design rating of the flare, the throughput levels listed in the permit application, and a landfill gas fuel heat content of 450 Btu/SCF, or other heat content as specified in the formulae below:

Gas Consumption ^{(a)(b)} (daily) 720,000 SCF/day * ((450 Btu/SCF) / {Landfill Gas HHV in Btu/SCF})

Gas Consumption ^{(a)(b)} (annual) 262.80 MMSCF/year * ((450 Btu/SCF) / {Landfill Gas HHV in Btu/SCF})

- (a) Includes gas burned by the flare and by the flare pilot.
(b) Compliance with the throughput limits shall be based upon the most recent Higher Heating Value (HHV) analysis of the landfill gas obtained in accordance with the sampling and testing schedule specified in this permit.

2. **Emissions Limitation.** Mass emissions rates resulting from the operation of the equipment listed in this permit shall not exceed the values listed in Table 1. Compliance with this condition shall be based on source testing, fuel usage, and the total sulfur content analysis of the fuel.

Table 1
Permitted Emissions ^{(a) (b)}

	NO _x	ROC	CO	SO _x	TSP	PM ₁₀
Ground Flare						
lb/hr	0.81	0.11	5.40	N/A	N/A	N/A
lb/day	19.44	2.59	129.60	39.53	6.48	6.48
tons/year	3.42	0.46	22.78	6.95	1.14	1.14

- (a) Calculations based on a flared gas maximum heat release rate of 13.5 MMBtu/hr and minimum 330 Btu/SCF gas HHV.

3. **Gaseous Fuel Sulfur Limit.** The total sulfur content (calculated as H₂S at standard conditions, 60° F and 14.7 psia) of the gaseous fuel burned at the facility shall not exceed 15 grains per 100 cubic feet (239 ppm_v).

The permittee shall measure the total sulfur content of the gaseous fuel quarterly in accordance with ASTM-D1072 or a District approved equivalent method. Records shall be kept on site and made available for inspection by the District upon request.

4. **Oxides of Nitrogen (NO_x) Concentration Emissions Limits.** Emissions of NO_x (as NO₂) from the equipment subject to this permit shall not exceed a stack emission rate of 0.06 lbs/MMBtu. Compliance with this condition shall be based on source testing, and maintaining the flare's combustion setpoint and actual temperatures consistent with Condition 8.g and no higher than that verified through source testing to comply with the emission limit.

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5. **Carbon Monoxide (CO) Concentration Emissions Limits.** Emissions of CO from the equipment subject to this permit shall not exceed a CO stack emission rate of 0.40 lb/MMBtu. Compliance with this condition shall be based on source testing, and maintaining the flare's combustion setpoint and actual temperatures consistent with Condition 8.g and no lower than that verified through source testing to comply with the emission limit.
6. **Non-Methane Organic Compound (NMOC) Emission Limits or Destruction Efficiency.** Emissions of NMOC from the ground flare exhaust shall not exceed a concentration of 20 ppmvd, as hexane equivalents, corrected to 3 percent excess oxygen concentration. Alternately, the ground flare shall demonstrate a NMOC destruction efficiency of at least 98 percent by mass of NMOC contained within the landfill gas to be flared. Compliance with these provisions shall be demonstrated by source testing and the requirements of 40CFR, Subpart WWW, §60.754.(d). In addition, the flare's combustion setpoint and actual temperatures shall be maintained consistent with Condition 8.g and no lower than that verified through source testing to comply with the emission limit.
7. **Fuel Usage Metering.** The permittee shall operate a dedicated pressure-corrected fuel meter for the enclosed ground flare subject to this permit.
8. **Operational Limitations.** The following limitations shall not be exceeded:
 - a. The flare gas flow meter shall be calibrated according to manufacturer's specifications and frequencies, or more frequently if and when anomalous readings occur. Calibration records shall be maintained and made available for District inspection;
 - b. The flare outlet shall be equipped with an automatic ignition system including a pilot-light gas source or equivalent system, or shall operate with a pilot flame present at all times -- with the exception of purge periods for automatic ignition equipped flares;
 - c. The presence of the flame in the flare pilot shall be continuously monitored using a self-checking U. V. detector or an equivalent device that detects the presence of a pilot flame;
 - d. The flame shall be operating at all times when combustible gasses are vented through the flare;
 - e. A maximum wet landfill gas capture rate of 500 SCFM;
 - f. Except for startup and shutdown periods of no more than one hour involving the light-off of the flare pilot, the flare temperature controller setpoint shall be set at a temperature of 1500 °F or as further restricted under Conditions 4, 5 or 6.
 - g. The actual flare combustion temperature shall vary by no more than +/- 5 percent from the temperature controller setpoint (e.g., per 8.f above) for any period longer than 15 minutes; and
 - h. The landfill gas collection and Ground Flare systems shall not be shut down and inoperable for any more than 120 consecutive hours.

See
Revised Page 5

40 CFR, Subpart Cc (via WWW) Compliance (Conditions 9, 10, 11 and 12)

9. **Surface Monitoring, Maintenance and Recordkeeping Plan.** The permittee shall follow the Surface Monitoring, Maintenance and Recordkeeping ("SMMR") Plan dated May 2000 and approved by the APCD through this permit's issuance to fulfill the requirements of NSPS, 40 CFR, Subpart WWW, §60.753(d) to control landfill surface methane gas emissions. Any corrective actions required to comply with §60.753(d) shall be performed, recorded and reported to the APCD consistent with the requirements of §60.755(c). The SMMR Plan may only be revised upon written request to, and approval from the APCD.
10. **Active Collection System Design Plan and Updates.** The permittee shall submit an Active Collection System Design ("ACSD") Plan to the APCD within 60 days of this permit's issuance date. The ACSD Plan documents how the project meets the requirements of 40 CFR, Subpart WWW, §60.759, §60.753 and §60.753(a). The ACSD Plan (and the collection well map) shall be updated every calendar quarter to document the repair/rework, shut down, or installation of existing/new wells required to maintain surface or perimeter methane emissions in compliance with 40 CFR, Subpart WWW, §60.755(b) and 60.755(c)(4)(v) requirements.
11. **Active Collection System – Well Monitoring Program.** The project shall operate and adjust the gas flow rate, temperature, pressure (or vacuum), and nitrogen/oxygen content of each active well consistent with the requirements of 40 CFR, Subpart WWW, §60.753(b), (c), (d) and (g). Well monitoring data shall be collected consistent with the requirements of 40 CFR, Subpart WWW, §60.756. This data shall be reported quarterly to the APCD in the format approved by the APCD. The Well Monitoring Program data reported, and its format may only be revised upon written request to, and approval from the APCD.
12. **Active Collection System – Exceptions Report.** Annually, the project shall submit to the APCD a report consistent with the provisions of Subpart WWW, §60.757(f), detailing any exceptions to operations standards for active collection systems designed in accordance with 40 CFR, Subpart WWW, §60.752(b)(2)(ii).
13. **Source Testing.** By February 28, 2000, and after that date at a minimum frequency of once every 36 months, the permittee shall conduct stack emissions testing of air emissions and process parameters listed in Table 2. If the actual annual gas flare volume exceeds 250 MMSCF in any calendar year, an annual source test will be required on the next anniversary of the initial test date. The permittee shall submit a written source test plan to the District for approval. The source test plan shall be prepared consistent with the District's "Source Test Procedures Manual" (revised May 24, 1990). The permittee shall obtain written District approval of the source test plan prior to source testing. The District shall be notified at least ten (10) calendar days prior to the start of source testing to arrange for a mutually agreeable source test date when District personnel may observe the test.

Source test results shall be submitted to the District within forty-five (45) calendar days following the date of source test completion and shall be consistent with the requirements

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40 CFR, Subpart Cc (via WWW) Compliance (Conditions 9, 10, 11 and 12)

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Source test results shall be submitted to the District within forty-five (45) calendar days following the date of source test completion and shall be consistent with the requirements

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approved within the source test plan. All costs associated with the review and approval of all plans and reports and the witnessing of tests shall be recovered per Rule 210.

Any District certified source test result which indicates that Permit to Operate emission limitations have been exceeded shall constitute a violation of the Permit to Operate. Source test results shall demonstrate compliance with emission rates, permit conditions, NSPS and applicable APCD rules. All APCD costs associated with the review and approval of all plans and reports and the witnessing of tests shall be paid by the project as provided for by APCD Rule 210.

A source test for an item of equipment shall be performed on the scheduled day of testing (the test day mutually agreed to) unless circumstances beyond the control of the operator prevent completion of the test on the scheduled day. Such circumstances include mechanical malfunction of the equipment to be tested, malfunction of the source test equipment, delays in source test contractor arrival and/or set-up, or unsafe conditions on site. Except in cases of an emergency, the operator shall seek and obtain APCD approval before deferring or discontinuing a scheduled test, or performing maintenance on the equipment item on the scheduled test day.

Once the sample probe has been inserted into the exhaust stream of the equipment unit to be tested (or extraction of the sample has begun), the test shall proceed in accordance with the approved source test plan. In no case shall a test run be aborted except in the case of an emergency or unless approval is first obtained from the APCD. If the test can not be completed on the scheduled day, then the test shall be rescheduled for another time with prior authorization by the APCD. Failing to perform or complete the source test of an equipment item on the scheduled test day without a valid reason and without APCD's prior authorization, except in the case of an emergency, shall constitute a violation of this permit. If a test is postponed due to an emergency, written documentation of the emergency event shall be submitted to the APCD by the close of the business day following the scheduled test day.

14. **Process Monitoring Systems.** The process monitoring devices listed below shall be properly operated, maintained, and calibrated according to the instrument manufacturer's instructions, or good engineering practice if no such instructions are available:
- ⇒ Landfill gas surface emissions monitor (methane); and
 - ⇒ Landfill gas collection well operations monitor(s) that gather the following data: a) well gas temperature; b) well gas pressure/vacuum; and c) well gas nitrogen or oxygen contents.

The permittee within 60 days of this permit's issuance date, shall submit to the APCD a *Process Monitoring System Operations, Calibration & Maintenance Plan* that identifies the proposed instruments, their operating specifications, capabilities & procedures, and their calibration and maintenance requirements. The permittee shall respond to any APCD comments on the proposed plan and/or provide requested information within 30 days of receipt of such comments or requests. The *Plan*, once approved by the APCD, may only be revised upon written request by the permittee, and approval of the APCD.

15. **Recordkeeping.** The following records (electronic or hard copy) shall be maintained by the permittee and shall be made available to the District upon request:

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- a. The quantity (SCF) of landfill gas burned each month by the flare;
 - b. The peak daily volume of landfill gas (day/day) burned by the flare each month, along with the date of the peak;
 - c. The quarterly sulfur content (ppm) of the landfill gas burned by the flare;
 - d. On a quarterly basis, the higher heating value of the landfill gas (Btu/SCF) shall be measured and recorded using appropriate ASTM sampling and analysis techniques;
 - e. For each instance that the Ground Flare and/or gas collection system is not operated, a record of the shutdown start time/date, and the restart time/date shall be kept;
 - f. A circular, strip chart, or other APCD-approved method of tracking the actual ground flare combustion temperature. The ground flare temperature controller setpoint temperature shall also be logged and recorded for whenever it is changed; and
 - g. Maintenance and calibration logs for the flare, the flare temperature controller and recorder, the flared gas fuel flow meter, the landfill gas methane surface emissions monitor, and landfill gas collection well data monitor(s).
16. **Reporting Requirements.** By March 1 of each year, a report detailing the previous calendar year's activities shall be provided to the District. The report shall list all the data required by Conditions 15.a through 15.e (Recordkeeping) compiled on a monthly basis and summarized for the entire year.
- Quarterly, surface methane emissions, and landfill gas collection well monitoring records and data consistent with the requirements of Condition Nos. 9, 10 and 11 shall be submitted to the APCD. Annually, a report consistent with the requirements of Condition No. 12 shall be submitted to the APCD.
17. **Reimbursement of Costs.** Subject to Rule 210, all costs reasonably incurred by the District, including District consultants and legal counsel, (but not attorney's fees in litigation) related to this permit and implementation and enforcement of these permit conditions shall be reimbursed by the permittee within 30 calendar days of invoicing by the District.
18. **Equipment Operation.** Operation under this permit shall be conducted in compliance with all data, specifications and assumptions included with the application (and supplements thereof) as documented in the District's project file and the attached District Engineering Evaluation under which this permit was issued.
19. **Compliance.** Nothing contained within this permit shall be construed to allow the violation of any District, State or Federal rule, regulation, ambient air quality standard or air quality increment.

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20. **Severability.** If any condition herein is determined to be invalid, all other conditions shall remain in force.

AIR POLLUTION CONTROL OFFICER

Douglas W. Allard

OCT 30 2000

Date

Notes:

1. Next reevaluation due: October 2003
2. This permit supersedes: PTO 9547 issued October 16, 1997

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**Table 2
Flare Source Test Requirements**

Emission Points	Pollutants/Parameters	Test Method
Flare Stack	NO _x – ppm _v & lb/hour	EPA Method 7E
	CO – ppm _v & lb/hour	EPA Method 10
	NMOC, mass In & Out; Alternately: NMOC Out, ppmvd as hexane @ 3 % oxygen	EPA Method 25C (*) or Method 18(**)
	Sampling Point Dtr	EPA Method 1
	Stack Gas Flow Rate	EPA Method 2
	O ₂ , CO ₂ , Dry Mol Wt	EPA Method 3
	Moisture Content	EPA Method 4
	Combustion Temperatures	Test flare operating at 1500 °F (+/-30 °F).
Gas Line	Fuel Gas Flow	Plant Gas Meter
	Higher Heating Value	ASTM D-1826-88
	Total Sulfur Content	ASTM D-1072

Site Specific Requirements

- a. Alternative methods may be acceptable on a case-by-case basis.
- b. This test is required to characterize the maximum hourly potential to emit when fired on natural gas for NO_x and CO in units of ppm, lbs/MMBtu and pounds/hour. The test shall be performed at the maximum achievable gas flow rate to the flare.
- c. The emission rates shall be based on EPA Methods 2 and 4, or Method 19 along with the heat input rate.
- d. For NO_x, CO and O₂, a minimum of three 40-minute runs shall be obtained during each test.
- e. (*): For compliance determinations using Method 25C for NMOC ppmvd out, divide the measured ppmvd by six to obtain hexane equivalents.
- f. (**): For compliance determinations using Method 18, the minimum list of compounds to be tested shall be consistent with those published in AP-42, Section 2.4 applicable to Landfill Gas emissions and control devices.

Table Notes

Dtr = Determination

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BACKGROUND:

The City of Santa Maria submitted an application for an Authority to Construct on September 13, 2000 to address the source test results that indicated that the existing flare system capacity requirements were in excess of that authorized under PTO 9547, issued October 16, 1997. This application was deemed complete on September 25, 2000. This permit reflects the application's proposed modifications to the flare's capacity and landfill gas characteristics as follows:

- The flare's maximum allowed heat release rate is increased to 13.5 MMBtu/hr (i.e., 10.5 MMBtu/hr under PTO 9547, issued October 16, 1997). Associated criteria pollutant emission increases result from this authorized heat release increase; and
- The landfill gas high heating value (HHV) is assumed to average 450 Btu/SCF, with a further operating limitation that the HHV shall not drop below 330 Btu/SCF.

Because the emission factors and permitted emission limitations specified under the ATC application have been verified during the year 2000 source tests for this equipment, the APCD has elected to issue this permit as a combined ATC/PTO. This ATC/PTO 10318 supercedes PTO 9547, issued October 16, 1997.

This ATC/PTO 10318 also serves to reevaluate the previous PTO 9547 and thus includes new provisions to bring the landfill gas collection and control operations into compliance with the requirements of Rule 341, and the applicable referenced federal requirements of 40 CFR, Subpart Cc – Emission Guidelines for MSW Landfills.

PROCESS DESCRIPTION:

Landfill gas, which contains 30% to 60% methane, is produced when buried refuse decomposes. This permit is for equipment that collects and destroys the gas produced by the Santa Maria Landfill. The gas collection system as of October 2000 utilizes approximately 54 wells, 24 of which will were drilled during Phase I, and 30 that were drilled during Phase II. The depth of the wells varies with the depth of the waste. The destruction of the produced gas occurs at the ground flare which is designed to operate as the Best Available Control Technology (BACT) for NO_x and CO. This project is designed to minimize the potential contamination of groundwater by landfill gas and to control subsurface and surface landfill gas migration.

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CALCULATIONS:

The enclosed attachment contains the emission calculation worksheets. The pertinent results of the calculations are presented here to summarize the permitted emissions.

A. POTENTIAL TO EMIT (PTE)

The pounds per hour potential to emit emissions scenario is:

1. Combustion of 30,000 SCF/hr of landfill gas at 450 Btu/SCF (13.5 MMBtu/hr).
2. A landfill gas total sulfur content of 239 ppm.

The pounds per day potential to emit emissions scenario is:

1. Combustion of 720,000 SCF/day of landfill gas at 450 Btu/SCF. Up to 981,800 SCF/day can be burned if the landfill gas HHV drops to the minimum allowed of 330 Btu/SCF.
2. A landfill gas total sulfur content of 239 ppm at 330 Btu/SCF.

The tons per year potential to emit emissions scenario is:

1. Operation of the ground flare at maximum capacity 24 hrs/day, 365 days/year.
2. A landfill gas total sulfur content of 239 ppm at 330 Btu/SCF.

- B. CRITERIA POLLUTANT EMISSIONS:** Tables 1 through 4 summarize the permitted emissions of equipment included in this permit, the facility permitted emissions, the net emissions increase since 1990, and the facility exempt equipment emissions.

INSPECTION REPORT:

The ground flare was last source tested on May 26, 2000 at a throughput of 12.0 MMBtu/hr and found to be in compliance with the emission factors specified under Permit to Operate 9547 issued October 16, 1998, and this ATC/PTO 10318 for NO_x and CO. However, operations of the flare at 12.0 MMBtu/hr, and the associated NO_x emissions exceeded that authorized under PTO 9547. As a result, the City of Santa Maria was issued a Notice of Violation to document the exceedances. The issuance of this permit addresses the noted exceedances detected during the May 26, 2000 source test. In addition, by February 2001, this permit requires the flare also be tested for its NMOC emissions against the requirements of 40CFR, Subpart WWW. In the future, the ground flare must be source tested at a minimum frequency of once every 36 months. If the actual annual gas flare volume exceeds 166 MMSCF in any calendar year (based on 90% of annual permitted throughput), an annual source test will be required on the next anniversary of the initial test date.

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RULES IN COMPLIANCE:

- Rule 101. Compliance by Existing Installations: Conflicts**
- Rule 201. Permits Required**
- Rule 202. Exemptions to Rule 201**
- Rule 205. Standards for Granting Permits**
- Rule 210. Fees**
- Rule 301. Circumvention**
- Rule 302. Visible Emissions**
- Rule 303. Nuisance**
- Rule 309. Specific Contaminants**
- Rule 310. Odorous Organic Sulfides**
- Rule 311. Sulfur Content of Fuels**
- Rule 341. Municipal Solid Waste Landfills**
- Rule 505. Breakdown Conditions**
- Rule 801. New Source Review**
- Rule 802. Nonattainment Review**
- Rule 803. Prevention of Significant Deterioration.**

Table 1
Permitted Potential to Emit (PPTE)

	NO _x	ROC	CO	SO _x	TSP	PM ₁₀
Ground Flare						
lb/hour	0.81	0.11	5.40	1.65	0.27	0.27
lb/day	19.44	2.59	129.60	39.53	6.48	6.48
tons/year	3.42	0.46	22.78	6.95	1.14	1.14

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Table 2
Facility Potential to Emit (FPTE)

	NO _x	ROC	CO	SO _x	TSP	PM ₁₀
Ground Flare						
lb/hour	0.81	0.11	5.40	1.65	0.27	0.27
lb/day	19.44	2.59	129.60	39.53	6.48	6.48
tons/year	3.42	0.46	22.78	6.95	1.14	1.14

Table 3
Facility Project Emissions ("I")

The Project NEI under this ATC/PTO 10318 is the difference in FPTE between this ATC/PTO and the previous PTO 9547 issued in October 16, 1997. The calculated "I" is documented below:

	NO _x	ROC	CO	SO _x	TSP	PM ₁₀
ATC/PTO 9547 ("A")						
lb/day	19.44	2.59	129.60	39.53	6.48	6.48
tons/year	3.42	0.46	22.78	6.95	1.14	1.14
PTO 9547 ("B")						
lb/day	15.1	2.0	100.8	30.84	5.0	5.0
tons/year	2.76	0.37	18.40	5.63	0.92	0.92
Project "I" ("A"- "B")						
lb/day	4.34	0.59	28.8	8.69	1.48	1.48
tons/year	0.66	0.09	4.38	1.32	0.22	0.22

As can be seen for the Project "I" above, no Regulation VIII, NSR triggers (e.g., BACT, Offsets or AQIA) were exceeded for this project.

Table 4
Facility Net Emission Increase Since 1990 (FNEI-90)

	NO _x	ROC	CO	SO _x	TSP	PM ₁₀
Ground Flare						
lb/hour	0.81	0.11	5.40	1.65	0.27	0.27
lb/day	19.44	2.59	129.60	39.53	6.48	6.48
tons/year	3.42	0.46	22.78	6.95	1.14	1.14

Engineering Evaluation
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Table 5
Facility Exempt Emissions (FXMT)

Not including mobile source combustion emissions and fugitive landfill gas emissions (i.e., C1, NMOC, and ROC)

	NO _x	ROC	CO	SO _x	TSP	PM ₁₀
Santa Maria Landfill						
lb/hour	0.00	0.00	0.00	0.00	0.00	0.00
lb/day	0.00	0.00	0.00	0.00	0.00	0.00
tons/year	0.00	0.00	0.00	0.00	0.00	0.00

RECOMMENDATIONS:

- [6] Approve with most standard conditions from previous PTO 9547. Permit conditions were added to this ATC/PTO to reflect the applicability of NSPS, Subpart Cc to the landfill gas collection and control systems as triggered by adoption of APCD Rule 341.

ATTACHMENTS:

A Flare Emissions Calculations

FEE CALCULATION:

This project is handled on a cost reimbursement basis (CMIS #: 205395).

Evaluator:

Steve Sterner

Reviewer:

G. Jerry Schiebe

Evaluation Date:

September 25, 2000

[Handwritten signatures and dates]
10/26/00
10/26/00

Attachment: A

Date: 09/25/00

LANDFILL GAS-FIRED FLARE CALCULATION WORKSHEET (ver. 6.0)

DATA

Permit No.	9547
Owner/Operator	City of Santa Maria
Facility/Lease	City Landfill
Flare Type	Firetube
Flare Mfg.	Perennial Energy
Flare Model No.	14303233-Z-00-10
Flare Serial/ID No.	no data
Flare Horsepower	no data Bhp
Burner Type	Gas
Burner Mfg.	Perennial Energy
Burner Model No.	no data
Max. Firing Rate of Burner	13.500 MMBtu/hr
Max. Annual Heat Input	113,880.000 MMBtu/yr
Daily Operating schedule	24 hrs/day
Yearly Load factor (%)	100 %
Fuel Type	Other
High Heating Value	330 Btu/scf
Sulfur Content of Fuel	239.00 ppmvd as H ₂ S
Nitrogen Content of Fuel	- wt. % N
Boiler Classification	Industrial
Firing Type	Vertical
PM Emission Factor	0.0200 lb/MMBtu
PM ₁₀ Emission Factor	0.0200 lb/MMBtu
NO _x Emission Factor	0.0600 lb/MMBtu
SO _x Emission Factor	0.1220 lb/MMBtu
CO Emission Factor	0.4000 lb/MMBtu
ROC Emission Factor	0.0080 lb/MMBtu

RESULTS

	<u>lb/hr</u>	<u>lb/day</u>	<u>TPY</u>
Nitrogen Oxides (as NO ₂)	0.81	19.44	3.42
Sulfur Oxides (as SO ₂)	1.65	39.53	6.95
PM ₁₀	0.27	6.48	1.14
Total Suspended Particulate (PM)	0.27	6.48	1.14
Carbon Monoxide	5.40	129.60	22.78
Reactive Organic Compounds (ROC)	0.11	2.59	0.46
Hourly Heat Release	13.500 MMBtu/hr		
Daily Heat Release.....	324.000 MMBtu/day		
Annual Heat Release	113,880.000 MMBtu/yr		